## Remarks

Claims 1-56 are pending in this application. Claims 1-56 were rejected in the final Office Action. Applicants believe that the invention is patentable. Claims 1, 17, 29, and 45 have been amended to more particularly point out the invention. Claims 1 and 29 have been amended to clarify that packets arriving at the regulator are handled in accordance with the token bucket configuration for the token bucket associated with the subscriber. The amendment further clarifies that the token bucket configuration for the token bucket associated with the subscriber is dynamically adjusted based on demand, and the dynamic adjustment affects the way that packets arriving at the regulator are handled. Claims 17 and 45 have been amended to clarify that the token bucket configuration for the token bucket associated with the subscriber is dynamically adjusted based on demand, and the dynamic adjustment affects the way that packets arriving at the regulator are handled.

Overall, the amendments clarify the relationship between packet handling at the regulator and the dynamic adjustment in claims 1, 17, 29, and 45, which is believed to be patentable in the claimed combinations.

Claims 21, 24-27, 49, and 52-55 were rejected under 35 U.S.C. § 112, second paragraph. In rejecting claims 21 and 49, the Examiner stated that it is not clear what is the difference between "packet rate" and "data rate," and that there are no clear definitions for "packet rate" and "data rate." In rejecting claims 24-25 and 52-53, the Examiner states that there is no clear definition for "the amount of the flow in terms of data." Similarly, in rejecting claims 26-27 and 54-55, the Examiner states that there is no definition for "the amount of the flow in terms of packets." The specification clearly describes packet rate, data rate, flow in terms of packets, and flow in terms of data. In light of the specification, these terms have clear meaning when recited in the claims.

Applicants direct the Examiner's attention to the specification at page 6, lines 13-18; page 13, line 28 - page 14, line 16; and Figure 14. Page 14, lines 10-16 states that "the

subscriber is simultaneously subjected to sustain rate and burst size limits in terms of packets and subjected to sustain rate and burst size limits in terms of data (bits or bytes)." It is well understood that data refers to bits or bytes and that packets contain (or package) data. The fact that packets contain data is also explained in the background art at page 1, line 8 - page 2, line 2. Applicants respectfully request that the Examiner withdraw the rejections under 35 U.S.C. § 112, second paragraph.

Claims 1-3, 9-10, 13, 29-31, 37-38, and 41 were rejected under 35 U.S.C. § 102(b) as being anticipated by Tang (U.S. Patent No. 6,373,824). Regarding independent claims 1 and 29, these claims currently recite combinations including "dynamically adjusting the token bucket configuration for the token bucket associated with the subscriber based on the demand to affect the way that packets arriving at the regulator are handled," while the remaining claims are dependent claims. Tang fails to suggest dynamic adjustment of the token bucket configuration for the token bucket associated with the subscriber based on the demand to affect the way that packets arriving at the regulator are handled.

The Examiner makes reference to Tang, column 3, lines 1-15. The Examiner states that Tang discloses the adjustment of the token bucket configuration for the subscriber based on the demand "in real time." Column 3, lines 1-15, describes measuring the rate and the burstiness of traffic and notes that the traffic source need not be a token bucket shaper. In more detail, this portion of Tang describes measuring both the rate (r) and the burstiness (b) of traffic. According to Tang, it is possible to find b as a function of r using techniques of complexity $O(n)$. According to Tang, conventional algorithms are of complexity $O(n \log n)$, wherein n is the number of packets in the traffic pattern. By reducing complexity to $O(n)$, Tang states that computations may be performed efficiently and in real time.

Tang is discussing performing computations in real time. These computations performed by Tang are computations to determine rate (r) and burstiness (b) of traffic. Tang is observing packet traffic, and making computations based on the observations. Tang only computes r and b and makes no suggestion at all of the claimed combinations including

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dynamic token bucket configuration adjustment for the token bucket associated with the subscriber based on the demand to affect the way that packets arriving at the regulator are handled.

Tang is not dynamically adjusting the token bucket configuration. Tang is only observing packet traffic, and performing computations based on the observations. These computations are performed in real time. However, there is no dynamic token bucket configuration adjustment as claimed by Applicants.

*Although Tang does describe a token bucket, and does describe measuring traffic including measuring the rate (r) and the burstiness (b) of traffic, Tang makes no suggestion of the specific features claimed by Applicants. The claims specifically recite making an adjustment to affect the way that packets arriving at the regulator are handled. In Tang, there is no such adjustment. Tang is about observing packet traffic. The claimed invention involves handling packets, measuring demand, and making dynamic adjustments to affect the way that packets arriving at the regulator are handled. The fact that traffic conditions may vary in Tang does not suggest the specifically claimed feature of making the dynamic adjustment to affect the way packets arriving at the regulator are handled in the claimed combinations. That is, the claimed invention involves a special relationship between packet handling at the regulator and the dynamic adjustment. Although Tang describes a token bucket and measures traffic, there is no suggestion of the claimed invention.*

Claims 4 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tang. These claims are dependent claims and are believed to be patentable.

Claims 5-8, 14-20, 33-36 and 42-48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tang in view of Wang (U.S. Patent No. 6,748,435). Independent claims 17 and 45 recite the dynamic adjustment of the token bucket configuration which is not suggested by Tang for reasons given above. Wang also fails to suggest dynamic adjustment

of the token bucket configuration for the subscriber based on the demand. Thus, Wang fails to overcome the deficiency of Tang. The remaining claims are dependent claims.

Claims 11-12, 21-22, 39-40 and 49-50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tang in view of Liu (U.S. Patent Application Pub. No. 2004/0081095 A1). Independent claims 21 and 49 recite a first token bucket using tokens to regulate the packet flow in terms of packet rate and a second token bucket using tokens to regulate the packet flow in terms of data rate such that a particular packet is subjected to handling in accordance with both the first token bucket and the second token bucket, in combination with other limitations. The remaining claims are dependent claims.

Applicants previously presented arguments in the reply of July 22, 2005 included pointing out that the claimed subject matter is more detailed than simply using multiple regulators.

In the final Action, the Examiner states that "each packet has a defined number of bits or bytes of data. Then, the packet rate, which is the number of packets transmitted per time unit, can be converted into bits or bytes of data transmitted per time unit, that is the data rate. Therefore, the modified assembly of Tang and Liu discloses limitations claimed in claims 21 and 49."

Applicants disagree, and believe that Tang and Liu fail to suggest the claimed subject matter. The Examiner states that the packet rate can be converted into the data rate because each packet has a defined number of bits or bytes of data. This is not necessarily true. Packets do contain data; however, it is well known that in a stream of packets the various packets may be of varying sizes, that is, may contain different amounts of data. Because the packets in a stream of data may contain different amounts of data, the claimed specific arrangement of first and second token buckets handles flow in a way that is not suggested by the prior art, and is more detailed than simply using multiple regulators.

Claims 23-28 and 51-56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tang in view of Berger (U.S. Patent No. 5,274,644). Independent claims 23 and 51 recite "the amount of tokens to be removed being based on the amount of the flow and further being based on a classification of the flow," in combination with other limitations. The remaining claims are dependent claims.

In the final Action, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the banks together to form a single and bigger bucket to regulate the traffic. The Examiner further states that there is no invention in shifting the location parts, and that in this case, combining the banks together would not change the traffic regulation function.

Berger describes rate-based multi-class access control. Berger does describe the use of a token bank per class, plus a spare bank. Simply combining the banks together just results in one big token bank. Using one big bank still does not achieve the claimed invention. The claimed invention is not just one big token bank, but involves removing tokens based on the amount of the flow and further based on a classification of the flow. The invention is not just about traffic regulation, the invention is about a particular approach to traffic regulation. "Shifting the location parts" of Berger does not achieve the claimed invention, and only achieves a big token bank.

The claimed invention involves using the same token bucket, but the amount of tokens being removed is based on the amount of the flow and further based on a classification of the flow. There is clearly no suggestion to modify Berger to combine the token banks and then to remove tokens from the combined bank based on the amount of flow and further based on a classification of the flow. After all, to account for multiple flow classifications, Berger teaches using a token bank per class.

For reasons given above, Applicants believe that the invention is patentable and that claims 1-56 are in condition for allowance.

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Respectfully submitted,

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Date: <u>December 27, 2005</u>

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